

REPORT OF COMPLIANCE SAMPLING INSPECTION (CSI)

AT
City of Eudora Wastewater Treatment Facility (WWTF)
702 W. 7th Street
Eudora KS 66025

NPDES NO: KS-0094609

July 18- 21, 2022

BY
U. S. ENVIRONMENTAL PROTECTION AGENCY
Region 7
Enforcement and Compliance Assurance Division (ECAD)

INTRODUCTION

I performed a Compliance Sampling Inspection (CSI) at the Eudora WWTF in Eudora, Kansas from July 18, 2022, through July 21, 2022. The inspection was authorized by Section 308(a) of the Federal Water Pollution Control Act, as amended. This narrative report presents the findings of the inspection.

PARTICIPANTS

City of Eudora

Brandon Boyd, Director of Public Works (785) 542-3100
Email: bboyd@cityofeudoraks.gov

People Service Inc. (Contract Operator)

George Hulet, Regional Manager, (660) 373-0122
Email: ghulet@peopleservice.com
Chris Cowell, Assistant Regional Manager, (660) 373-1276
Renee Cook, Operator
Scott Morgan, Operator

U. S. Environmental Protection Agency (EPA)

Joe Heafner, Life Scientist (913) 551-7091
Email: heafner.joseph@epa.gov

PROCEDURES

On July 18, 2022, I arrived, unannounced, at the City of Eudora WWTF at approximately 9:00 a.m. and met with Mr. Morgan. I introduced myself to Mr. Morgan, presented my credentials, and explained the purpose and procedures of the inspection. These procedures included completing the Water Compliance Inspection Report (attachment 1), an EPA Region 7 Biosolids Checklist (attachment 2), a facility walk-through with photos (attachment 3), a check of the self-monitoring records, the collection of influent and effluent samples, and an exit interview. Mr. Morgan stated that he was employed by People Service, who was contracted by the City of Eudora to operate the WWTF. After setting up the sampling equipment, I stated that I would contact Mr. Brandon Boyd with the city to discuss the inspection that was going to take place that week. After leaving the WWTF, I spoke with Mr. Boyd and explained the scope and purpose of the inspection.

From July 18, 2022, through July 21, 2022, I used an ISCO model 3710 automatic composite sampler to collect a 24-hour composite sample of the influent before the screening. I suspended a weighted length of new Tygon tubing into the influent channel before the screen and I connected the other end to the sampler pump and programmed it to collect evenly spaced aliquots every 30 minutes into a clean Nalgene bottle, which was packed in ice. I returned each day to service the sampler. I removed the bottle, agitated its contents, and poured them into clean, pre-labeled containers for the analysis of Biochemical Oxygen Demand (BOD), Non-Filterable Solids (NFS), Ammonia, Total Kjeldahl Nitrogen (TKN), Nitrates+Nitrites, Total Nitrogen (by Calculation) and Total Phosphorus (TP). I measured the pH and temperature in a separate grab sample using a field meter.

I used an ISCO model 3710 automatic composite sampler to collect a 24-hour composite sample of the effluent from the effluent channel from July 18, 2022, through July 21, 2022. I suspended a weighted length of new Tygon tubing into the channel and connected the other end to the sampler pump and programmed it to collect evenly spaced aliquots every 30 minutes into a clean Nalgene bottle, which was packed in ice. I returned each day to service the sampler. I removed the collection bottle, agitated its contents, and poured them into clean, pre-labeled containers for the analysis of BOD, NFS, Ammonia, TKN, Nitrates+Nitrites, Total Nitrogen (by Calculation), and TP. I measured the pH and temperature in a separate grab sample using a field meter.

On July 19, 2022, I took grab samples of the biosolids from the biosolids storage area and composited the samples into one 32-ounce glass jar. I hand delivered the sample of biosolids with the other collected samples. The biosolids were analyzed for Metals, including Mercury, percent solids, TP and TKN.

From July 19, 2022, through July 21, 2022, I placed the samples I collected on ice in an ice chest, sealed the container and hand delivered the cooler to the EPA Region 7 Science and Technology Center (STC) for analysis. I followed Region 7 LSASD standard operating procedures in the collection, packaging, transportation, and handling of the samples. Field Sheets and Chain of Custody forms were electronically submitted each day following Region 7

procedures. All samples arrived at the STC within proper holding times.

FACILITY DESCRIPTION

The Eudora WWTF is owned by the City of Eudora, Kansas and contract operated by People Service. The legal description is S ½, NE ¼, SW ¼, Section 5, Township 13 South, Range 21 East within Douglas County (attachment 4). The mailing address for the City of Eudora, Kansas, is P.O. Box 650, Eudora, KS 66025. The WWTF treats domestic wastewater from the City of Eudora. According to the NPDES permit and Mr. Boyd, there are no significant industrial users within the city. Final effluent from the WWTF is discharged to the Wakarusa River.

The following are components of the WWTF:

- Headworks which includes mechanical screening
- Schreiber Extended Aeration Basin (2) (1 in operation at time of inspection)
- Clarifiers (2)
- UV Disinfection
- Cascading Re-Aeration Channel
- Extraneous Flow Basin

Biosolids are handled by the following:

- Aerobic Sludge Digestion (2)
- Belt Filter Press for dewatering
- Biosolids Storage Building
- Biosolids are landfilled at Hamm Sanitary Landfill, Perry KS

The facility has a design flow of 0.9 MGD with an actual flow average during the inspection of 0.439 MGD.

The WWTF's National Pollutant Discharge Elimination System (NPDES) Permit KS-0094609 was issued on January 1, 2022 (attachment 5). The permit expires on December 31, 2026.

FINDINGS AND OBSERVATIONS

The following findings were noted during the plant and record review. A complete summary is given in the NPDES Compliance Inspection Report Checklist (attachment 1). These findings were discussed with Mr. Cowell and Ms. Cook during the exit meeting.

Self-Monitoring Data Review:

I obtained a spreadsheet of the NetDMR data for the Andover WWTF from January 2018, through October 2021, and reviewed the data. During the inspection, I also obtained an electronic copy of the facility's Discharge Monitoring Reports for the years 2018 – 2021. The tables below represents the effluent violations noted during the review.

	Ammonia	Monthly Avg.Limit (mg/L)/ Daily Limit	TSS	Monthly Avg. Limit (mg/L)/ Weekly Average
May-18	4.57	3.2		
Apr-18				
Jun-18				
Nov-18	18.5	5.9/9		
Dec-18	18.3	6.7/9		
Mar-19	4.1	6.5/9		
Apr-19	14.4	4.1/9		
May-19	8.9	3.2/9		
Sep-19				
Oct-19	32.7	2.3/9		
Nov-20	24.2	3.7/9		
Dec-20	25.4	5.9/9		
Jan-21	23	6.7/9		
Mar-21	35.7	4.1/9		
Apr-21	16.2	4.1/9		
Oct-21				
Jan-22	6.9	3.0/9		
Feb-22	6.9	3.0/9	129	30/45
Mar-22	3.1	3.0/9		
Apr-22	6.9	3.0/9		

	E.Coli	Limit (Montly Geometric Avg.)/Daily Limit	BOD	Monthly Avg.Limit (mg/L)/Weekly Average
May-18				
Apr-18				
Jun-18	726,999	262		
Nov-18				
Dec-18				
Mar-19				
Apr-19	2419.99	262		
May-19				
Sep-19			75.2	30/45
Oct-19				
Nov-20				
Dec-20				
Jan-21				
Mar-21				
Apr-21	291	262		
Oct-21	24196	262/4348		
Jan-22				
Feb-22				
Mar-22				
Apr-22				

While reviewing the data, I noted an effluent violation for BOD in the month of September 2019. I noted E.coli violations in the months of June 2018, April 2019, April 2021, and October 2021. I noted Ammonia effluent violations throughout 2018- 2022, including the months of May 2018, November 2018, December 2018, March -October 2019, November-December 2020, January 2021-October 2021, and January 2022 – April 2022.

During the exit briefing, a Notice of Preliminary Findings (NOPF) was issued for the ongoing effluent violations occurring at the facility (Attachment 6, NOPF #1)

Sample Results

The analytical results from the inspection were received on August 18, 2022, from the Region 7 STC laboratory. This data was not discussed during the exit interview. The analytical results for BOD, NFS, TKN, Ammonia, Nitrates+Nitrites, Total Nitrogen, Total Phosphorus, Sulfate, pH, and temperature of the samples I collected are presented in Tables 1 and 2 below. See attachment 7 for the analytical data packet.

Table 1: Analytical Results for Influent

Parameter	(July 19) Sample # 2200219-1	(July 20) Sample #2200220-1	(July 21) Sample #2200221-1
BOD₅ (mg/L)¹	215	217	224
NFS (mg/L)	189	158	163
TKN (mg/L)	49.2	45.6	46.4
Nitrate+Nitrate (mg/L)	0.0951	0.101	0.282
Total Nitrogen	49.3	45.7	46.7
Ammonia (mg/L)	44.0	38.9	45.7
Total Phosphorus (mg/L)	6.04	6.68	9.96
Temperature (°C)²	21.8	22.5	21.9
pH³	7.07	7.19	7.22
Flow	0.408	0.432	0.477

¹mg/L = milligrams per liter

²°C = degrees Celsius, Temperature was measured in the field.

³pH is not to be averaged; pH was measured in the field.

Table 2: Analytical Results for Effluent Samples Collected During Inspection

Parameter	(July 19) Sample # 2200219-02	(July 20) Sample # 2200220-02	(July 21) Sample # 2200221-02	Concentration Permit Limits ³
BOD5 (mg/L)¹	2.84	4.30	3.90	25/40 for July
NFS (mg/L)	ND	ND	ND	30/45 for July
Ammonia (mg/L)	26.0	21.5	18.7	0.7/2.3 for July
TKN (mg/L)	21.0	20.6	20.8	N/A
Nitrate+Nitrite (mg/L)	0.115	0.0800	0.0730	N/A
Total Nitrogen (mg/L)	21.1	20.7	20.9	N/A
Total Phosphorus (mg/L)	1.62	1.43	2.37	N/A
Temperature (°C)²	25.5	24.8	24.4	N/A
pH²	6.90	7.03	7.03	6.0-9.0
Flow in MGD	NA	NA	NA	N/A

¹mg/L = milligrams per liter.

²°C = degrees Celsius, pH is not to be averaged, pH was measured in the field.

³Permit limits for BOD and NFS are Monthly followed by 7-day Averages. Limits for Ammonia are 30-day average followed by Daily Maximum.

Table 3: Analytical Results for Biosolids Sample Collected During Inspection reported as Milligrams per Kilograms (mg/kg)

Parameter	July 19
Aluminum	4620
Antimony	4.97
Arsenic*	6.07
Barium	258
Beryllium	ND
Cadmium*	1.45
Calcium	24100
Chromium	24.0
Cobalt	1.39
Copper*	308
Iron	7090
Lead*	9.54
Magnesium	4220
Manganese	184
Molybdenum*	10.6
Nickel*	14.0
Potassium	4180
Selenium	11.0
Silver*	ND
Sodium	1060
Thallium	ND
Vanadium	12.7
Zinc*	716
Mercury*	0.296
% Solids	16.3
TKN	1440
Total Phosphorus	1290

*40 CFR Part 503 Metals

Results from sampling conducted during the inspection indicate that the facility violated the daily effluent limits for Ammonia.

Biosolids (sludge)

As mentioned above, the facility utilizes two aerated digesters to treat biosolids (photos 6 & 8). Once treated, the biosolids are dewatered via a belt filter press then stored in a covered concrete building within a 20-ton dumpster (photo 12). The dumpster is picked up on a monthly basis and biosolids are disposed of at Hamm Sanitary Landfill in Perry, Kansas. I reviewed the weight tickets for years 2021 and 2022 and noted that in 2021, the facility disposed of approximately 137.23 wet tons of biosolids. In 2022 the facility has disposed of approximately 134.85 wet tons of biosolids through June 2022.

Laboratory

The facility contracts with Pace Analytical Laboratories in Lenexa, Kansas for all of its regulatory analysis. During the inspection, I requested the laboratory records to ensure that all analysis complied with requirements of 40 CFR part 136. During the review, I noted that samples for E.coli were qualified by the laboratory as not meeting holding times as required by 40 CFR Part 136. During the exit briefing, I issued a NOPF for not having the E.coli samples analyzed within the required holding times (Attachment 6, NOPF #2). Mr. Boyd in a response to the NOPF, stated that People Service has started to utilize a new laboratory to insure that E.coli samples were analyzed within the proper hold times.

Collection System

On July 18, 2022, I discussed the city's collection system with Mr. Boyd. Mr. Boyd stated that the collection system consists of approximately 49 miles of sewer main and seven lift stations. He stated that People Service maintains the lift stations while the city maintains the sewer mains. Mr. Boyd stated that the city maintains a cleaning program for the sewer mains and that the goal of the city is to clean one quarter of the mains each year. Mr. Boyd stated that the city does not experience Sanitary Sewer Overflows on a regular basis, however, when they do, the city documents and provides the information to KDHE as required. He also stated that the city had purchased a new vac truck and were waiting for delivery. He stated that an older jet truck has been used for cleaning out the sewer mains as needed. During the inspection, I observed four of the seven lift stations (photos 14-18). Mr. Boyd and Mr. Cowell stated that the main lift station located just east of the WWTF was in the process of being replaced. Mr. Boyd stated that the new lift station will have a chemical feed system attached to the lift station to treat phosphorus before influent reaches the WWTF. In my observations, I noted that all the lift stations had auto dialers and audible alarms to notify the operators of any issues at the lift stations. I also noted that the main lift station had an onsite generator as a backup power supply, however, none of the other lift stations observed had back up power (NOPF #4). Mr. Boyd stated in the response to the NOPF that portable generators could be deployed to the lift stations in case emergency power was needed.

Operational Issues and Observations

1. I observed all areas of the WWTF during the inspection (photos 1-18). I noted that not all the units were operating at the time of the inspection. I observed that the north aeration basin was not in operation at the time of the inspection. Mr. Cowell stated that the air diffusers were in the process of being replaced.
2. I noted that the facility only had one bank of Ultra-Violet (UV) lights operational at the time of the inspection (NOPF #5). Ms. Cook stated that the non-operational UV bank was used as parts for the functional bank. Mr. Boyd stated in the city's response to the NOPF that the city had recently noted that the UV system is obsolete, and many parts are hard to find. Mr. Boyd went on to state that the city was contacting several vendors to inquire on cost estimates to replace the current UV systems.
3. During the inspection, Ms. Cook and Mr. Cowell stated that a known air leak from the blowers to the south aeration basin was causing a decrease in the amount of oxygen in the basin (photo 7). Ms. Cook and Mr. Cowell believe that the lower dissolved oxygen in the basin was contributing to the poor treatment of wastewater at the facility. Ms. Cook stated that the operators check the dissolved oxygen levels in the basin daily. She said that the dissolved oxygen levels are within the range indicated in the operation manual, however, they are on the lower end of that range and they believe that is effecting the performance of the WWTF. I noted this as an issue on the NOPF (NOPF #3). Mr. Boyd stated in the response to the NOPF once the city receives their new vac truck, it will be used to help excavate around the area of the air leak and repairs can be made. He also stated that the city was waiting to complete repairs on the North basin so that treatment can continue without interruption.
4. Ms. Cook stated during the inspection, that the flow readings for the facility were an estimate of the flow due to the flow meter not recording accurate readings. Ms. Cook stated that pump run times from the main lift station were used in the calculations. I stated that the permit requires that flow was to be metered and not calculated (NOPF #3). Mr. Boyd in his response to the NOPF, stated that new flow meters were to be installed with the new main lift station project.
5. During the inspection, Ms. Cook stated that the facility has experienced several power outages since People Service has taken over operation of the facility. Special Condition #12 of the permit requires that an adequate back up power supply necessary for the operation of the WWTF and system be available (NOPF #4). I noted and did not observe a backup generator at the WWTF but a backup generator was available at the main lift station. I also noted that many other lift stations did not have adequate backup power. Mr. Boyd stated that in the event the WWTF loses power, flow is diverted to the equalization basin then brought back to the WWTF as needed. He also stated that the city does have portable generators that can be used to power the lift stations when power is not available.

Summary

The City of Eudora WWTF has several operation and maintenance issues that have led to poor performance and effluent violations at the WWTF. Issues include air leaks within the system, flow meters not working, and not having adequate power supplies.

The City of Eudora needs to ensure that all sample analysis is conducted in accordance with 40 CFR Part 136. At the time of the inspection, E.coli analysis was not being conducted within the proper holding times.

**JOSEPH
HEAFNER**
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JOSEPH HEAFNER
Date: 2022.09.01
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Joe Heafner
Life Scientist

**NICOLE
MORAN**
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NICOLE MORAN
Date: 2022.09.02
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Nicole Moran
Section Chief

Attachments:

1. Water Compliance Inspection Report, Form 3560-3 (4 pages)
2. EPA Region 7 Biosolids Checklist (3 pages)
3. Digital Photographs with Photo Log (12 pages)
4. Facility Satellite Photos/Maps (2 pages)
5. NPDES permit issued on January 1, 2022 (9 pages)
6. NOPF and Facility Response (5 pages)
7. Laboratory Analytical Report for Activity JAH2205 (30 pages)